MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2021/2022

DIT5301 – SYSTEM ANALYSIS AND DESIGN

(For Diploma students only)

9 AUGUST 2022
9:00 a.m - 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of **4 pages**.
2. Answer **ALL** questions.
3. Write your answers in the **Answer Booklet** provided.

STRUCTURED QUESTIONS (100 MARKS)
Instruction: Answer questions in the Answer Sheet Provided.

QUESTION 1 [25 MARKS]

a) Define Agile methodologies and list the **THREE** key principles of the Agile Methodologies. (5 marks)

b) Explain the **FIVE** major phases of the SDLC. (10 marks)

c) Define outsourcing. Identify **TWO** outsourcing arrangements and **TWO** reasons for outsourcing. (5 marks)

d) Explain cloud computing and give **THREE** advantages of a company using cloud computing. (5 marks)

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QUESTION 2 [25 MARKS]

a) ***Table 1*** below represents an IS project set of activities, its expected completion time and preceding activities.

Activity	Preceding Activity	Expected Completion Time (ET)
A	-	3
B	A	4
C	B	3
D	B	10
E	D	8
F	D	4
G	D	6
H	C, E, F, G	8
I	H	5
J	H	5
K	I	4
L	J	2
M	K, L	4

Table 1

i) Draw a network diagram for the IS project shown in *Table 1*. (4 marks)

ii) For each activity, calculate its earliest completion time (T_E) and latest completion time (T_L). Label T_E and T_L on the network diagram. (13 marks)

iii) Calculate the slack time (*ST*) for each activity. (2 marks)

iv) List the activities on the critical path (*CP*). Shade critical path in the network diagram. (2 marks)

b) Define the top-down planning approach and identify **THREE** advantages to the top-down planning approach over other planning approaches. (4 marks)

Continued.....

QUESTION 3 [25 MARKS]

a) Briefly explain about one-time cost and recurring cost. Give **ONE (1)** example for each cost. (4 Marks)

b) Assume monetary benefits of an information system at RM 80,000 per year, a discount rate of 12% and 4 year time horizon. Calculate:

i) Net Present Value (NPV) of all benefit. (5 Marks)

ii) Return on investment (ROI) if NPV of all cost = RM 280,406. (2 Marks)

c)

CUSTOMER	
Customer_ID	**Customer_name**
202	Rubiah
302	Nur Iman

ORDER			
Order_ID	**Customer_ID**	**Order_date**	**Amount**
321	202	04/24/22	656.00
322	302	04/25/22	3444.55
323	202	04/26/22	333.44

Figure 1: Customer and Order Relation

Based on the relation shown in Figure 1, answer following questions:

i. Determine the primary key for both relations. (2 marks)
ii. Write the relational schema for both relations. (2 marks)
iii. Identify the functional dependencies for both CUSTOMER and ORDER. (2 marks)

d) Benjamin is a system analyst who is responsible to build an initial prototype of the reports that is required by an accounting firm. To gather the initial requirements, he needs to find the answers to some fundamental questions. List out **FOUR** fundamental questions that must be answered for him to successfully build the prototype. (4 marks)

e) Provide **FOUR** advantages from using colour in enhancing the usability of a system. (4 marks)

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QUESTION 4 [25 MARKS]

a) These are the basic requirement for computerised Florist Ordering System:

- Customer enters personal information to *register* through system. The information is stored in Customer_Record. Customer will get a confirmation upon registration.
- Customer can *login* to the system by key in username and password.
- Customer can place the *order* and the record will be stored in Customer_Order.
- The system then automatically *generates a delivery order* based on Customer_Record. The list can be viewed by the Delivery person who will be processing the delivery items.
- System will *generate the weekly sales* based on data from Customer_Record and Customer_Order. The report will be stored in separated data storage called Sales_Record data.

Based on requirements above, draw a *Data Flow Diagram (Level 0)* for Florist Ordering System by showing general processes, data stores, data flows, and sources/sinks.

(15 Marks)

b) Define acceptance testing. Identify **TWO** possible outcomes of acceptance testing. (2 marks)

c) Briefly explain the **FOUR** types of test which are performed during alpha testing. (8 marks)

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